

CHARGE NUMBER: 2501  
PROJECT TITLE: SMOKE CHEMISTRY  
PROJECT LEADER: R. H. Newman  
PERIOD COVERED: October 1 - 31, 1985  
DATE OF REPORT: November 5, 1985

#### IR CAMERA

The IR camera has been serviced as part of the maintenance and to correct a drifting problem in the electronics. The camera has been remounted on its translational stage and set to view the two new calibrated temperature sources. Calibration of the camera video recorder system is in progress. The results will be analyzed with the image processor and included in the program for measuring the temperature profile of cigarette coals.

#### NEUTRON RADIOGRAPHY

Line density measurements were repeated on two Winston Box and two Winston 85mm cigarette samples. The data has been reduced to graphic form and is being analyzed. A memo will be issued shortly.

#### LIMS

The Perkin-Elmer chromatography data system is essentially ready. The last few instruments are currently being interfaced and a short training course is planned for the near future. A fairly extensive on-line help facility has been developed and a new terminal driver installed which automatically disconnects the network session at logout. Three new printer/plotters were installed and their functionality confirmed on the system. These will give users local hardcopy support for plots and reports.

#### SMOKE ANALYSIS

A sample of menthol purified by R. Izac to be supplied to C. Lilly was analyzed by capillary gc using simultaneous detection by FID, NPD, and FPD. The menthol was determined to be 99.4% pure. No peaks were found using the NPD or FPD, indicating the absence of compounds containing nitrogen or sulfur. The FID chromatogram showed the presence of 0.3% of an early peak presumed to be hexane (used in the purification) and two other small impurity peaks.

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The total smoke distribution of <sup>14</sup>C-nicotine labelled cigarettes was completed. The data is being analyzed. The mainstream pad, sidestream pad and butt extracts were given to R. Izac for analysis for nicotine.

## RADIATION SAFETY

Radiation safety procedures were completed this month including all required wipe tests and were found to be within tolerances.

## COUNTING EQUIPMENT

The Tennelec ratemeter, used in conjunction with a Spectrum Filter and Amplifier does an adequate job on small to medium size peaks. This system, however, does not appear to be a totally acceptable system to provide an analog output to the LIMS. It can perhaps be employed as an auxillary visual aid in comparing mass to activity peaks. Plans are to set up an Ortec counting system based on their new computer controlled nim-electronics (CCNIM) with a Model 974 Quad counter/timer which can be computer controlled (cc) or manually operated. This equipment will provide a dual counting system for the Siemans. Since the Berthold counter tubes and pre-amp/amp must be used in the flow through systems, adaptations must be made on power supplies and interfaces. This work is proceeding.

A handwritten signature in black ink, appearing to read "Alan M. Neuman".

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